REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. In the claims

As shown in the "Amendment to the Claims," claim 1 is currently amended to recite that the piezo-electric element has two radial surfaces wherein one of the radial surfaces is directly glued onto the membrane. Support for this amendment is provided in Fig. 1 which shows the radial surface of the piezo-electric element glued directly onto the membrane. Additional support is provided in the specification on page 5, lines 1-8, and in other relevant sections in the specification.

Claim 22 is canceled without prejudice or disclaimer in view of the amendment to claim 1.

Entry of this amendment is respectfully requested in the next Office communication.

2. Rejection of claims 15-30 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent 6,332,029 (Azima et al.)

This rejection is respectfully traversed in view of the amendment to claim 1 from which the remaining pending claims depend. Particularly, as will be discussed below, the Azima et al. patent clearly fails to disclose or suggest a transducer including a piezo-electric element having a radial surface directly glued onto a membrane.

Turning first to the specifics of the rejection, in the Office action, the panel (2) has been equated as the membrane required by the pending claims. In addition, the circular element (9) of the Azima et al. patent is construed as the piezo-electric element of the pending claims since the Azima et al. patent refers to the element as possibly being one of several different transducer embodiments including a piezo-electric disk.

Next, claim 15 requires a piezo-electric element that is structurally connected to the membrane in a prescribed manner: a radial surface of the piezo-electric element is directly glued to the membrane. The Azima et al. patent does not disclose or suggest such a connection between a piezo-electric element and a membrane.

The Azima et al. patent describes several embodiments wherein a piezo-electric element is employed. In each of the embodiments, the piezo-electric element or disk is arranged such that a substantial part thereof is spaced from the membrane for relative movement thereto, or alternatively, the peripheral margin of the piezo-electric element or disk is only connected to the membrane (col. 33, lines 17-36). It is clear from this passage that the Azima et al. patent does not envision directly gluing a radial surface of a piezo-electric disk to a membrane.

The first embodiment of the Azima et al. patent is described in connection to Fig. 13. In this embodiment, it is readily apparent that a radial surface of the piezo-electric disk (31) is not directly glued to the surface of the membrane (2). Instead, the piezo-electric disk (31) is mounted onto a cylindrical block (93) that is rigidly fixed in an aperture (20) of the membrane (2). Thus, according to this embodiment, the disk (31) is not at all adhered to the membrane (2).

The second and third embodiments of the Azima et al. patent are described in connection to Figs. 14 and 15. Once again, a radial surface of the piezo-electric disk (31) is not directly glued to the membrane (2). Instead, it is clear that the peripheral edges are secured to the membrane in order to allow the disk to move relative to the membrane (2).

Lastly, Fig. 24 shows a transducer in the form of a crystalline piezo-electric disk (27) that is mounted on a metallic carrier (118) which in turn is mounted onto the membrane (2). Once again, the disk (27) is not directly glued to the membrane (2), but instead it is glued directly to a metallic carrier (118).

As interpreted in the Office action, the rejection considers the panel (2) as the membrane of pending claim 15. As such, the metallic carrier (118) is an element that is in addition to the piezo-electric element and membrane required by claim 15. There is no suggestion that would motivate one skilled in the art to dispense with the carrier (118) and glue the piezo-electric disk (27) directly onto the membrane (2). To the contrary, the Azima et al. patent clearly indicates otherwise, as pointed out above.

In view of these observations, the Azima et al. patent is shown not to teach each limitation required by pending claim 15. As a result, the Azima et al. patent fails to anticipate pending claim 15 under the requirements of 35 U.S.C. § 102(b). Accordingly, withdrawal of this rejection is respectfully requested.

3. Rejection of 16-21 and 23-26 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent 6,332,029 (Azima et al.)

This rejection is traversed in view of the amendment of claim 15 and the discussion provided above regarding the shortcomings of the Azima et al. patent in view of amended claim 15. Claims 16-21 and 23-26 depend from claim 15 and are patentable based on their dependency from claim 15 and their individually recited features.

In addition, the transducer according to claims 15-21 and 23-26 has a significant advantage over the transducer of the Azima et al. patent since the piezo-electric disk described in the Azima et al. patent is limited in size relative to the surface of the panel. For example, the Azima et al. patent indicates that the piezo-electric disk is limited to a few percents of the entire panel surface (col. 16, lines 26-60).

On the other hand, as clearly shown in the drawings of the pending application, the transducer of claim 15 does not possess size restrictions of the piezo-electric disk relative to the membrane. For example, Figs. 10 and 13 show a piezo-electric disk of which the surface is approximately 38% of the surface of the membrane. Also, the embodiments of Figs. 2 and 12 show sizes of the piezo-electric disk wherein the piezo-electric disks takes up to nearly 30% of the entire surface of the membrane.

In view of the shortcomings of the Azima et al. patent and the observations of the advantages over the Azima et al. patent, it is submitted that claims 16-21 and 23-26 are not obvious over the Azima et al. patent under the requirements of 35 U.S.C. § 103(a). Accordingly, withdrawal of this rejection is respectfully requested.

4. Conclusion

As a result of the amendment to the claims and the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the Applicant's Attorney, the Examiner is invited to contact the undersigned at the numbers shown below.

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